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ABSTRACT

Higher education in the Byelorussian Soviet Socialist Republic (BSSR) is described, including the system's history, current conditions, functions, and structure. The particular shape of the Byelorussian higher education is in part due to the fact that it only came into being as a system after the revolution of 1917, meaning that from the beginning all institutions were fully integrated into the general planning system of the country. The institutions form a network of various orientations, and cover the main branches of the economy, science, technology, and culture (e.g., economic institutes, institutes of art and culture). Capable college applicants are admitted on the basis of competitive examination and school academic performance, although students wishing to study some important fields do not have to take entrance examinations. Full-time, evening, and correspondence courses are offered. The average length of full-time programs is 5 years, with full-time students attending classes 6 days a week for 6 hours each day. Research at colleges is directed to national economic concerns, instructional improvement, and the scientific and technical development of BSSR. Colleges cooperate with industry and scientific institutions to jointly solve problems. The document provides information on teachers, students, the training of specialists and their assignment to jobs, continuing professional education, and international educational exchange. (SW)

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MONOGRAPHS ON HIGHER EDUCATION

Higher Education in the Byelorussian SSR

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— it maintains relations with various organizations and institutions, both national and international, governmental and non-governmental, which are concerned with higher education.

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Higher Education in the Byelorussian SSR

E. G. BONDARENKO • V. T. VODNEV
A. P. KANDYBO

edited by : W. VOLLMANN
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PREFACE

The sixth volume of CEPES' series of monographs on systems of higher education is devoted to the Byelorussian SSR.

The particular shape of the Byelorussian higher education is in part due to the fact that it only came into being as a system after the revolution of 1917, meaning that from the beginning all institutions were fully inategrated into the general planning system of the country. Thus very close ties with industry and other sections of the economy, and society were established. These links which are of a very broad nature and constitute a major interface between industry and Byelorussian higher education are best represented by the common effort to retrain academic and industrial personnel undertaken in a very intensive and regular manner. The constant up-dating of acquired knowledge is one of the principal aims of Byelorussian institutions. Organization and structure were conceived in such a way so as to allow for such a provision. At the same time, the Byelorusisan system of higher education maintains close links with the higher education systems of other republics in the USSR. It has therefore succeeded in establishing a close network of exchange and harmonious complementarity.

We are particularly indebted to the Byelorussian Ministry of Higher Education and its collaborators, E. G. Bondarenko, V. T. Vodnev, and A. P. Kandybo who were instrumental in writing this monograph. As a

result of its comprehensive and instructive aspects, it constitutes a worthy contribution to CEPES' endeavour to make the national systems of higher education better known.

The final editing has been accomplished by Wolgang Vollmann with the collaboration of Leland Barrows for linguistic editing.

F. EBERHARD
Director CEPES

INTRODUCTION

Nowadays higher education is regarded everywhere as an indispensable prerequisite for social, economic, scientific, technical, and cultural progress. This fact is demonstrated by the expansion of its scope of action and by its growing impact on the advance of scientific and technical progress, on economic development, and on the continued growth of the spiritual wealth of society.

By greatly increasing the rate at which social production is improved scientifically and technically, and by training the majority of specialists, higher education is the main source of new scientific ideas and their exploitation by means of the national economy for the benefit of the people. Indeed, this ultimate aim of higher education is characteristic of Soviet higher education as a whole.

Higher education in the BSSR, is an integral part of the whole system of Soviet higher education, to which it is closely linked both organically and by similarity of tradition and purpose. The system as a whole has developed as the national economy has developed. It has contributed to the tasks of social and economic progress, particularly that of raising the Soviet standard of living.

The aim of this monograph is to provide a short but comprehensive description of the Byelorussian system of higher education. Consequently it touches on the system's history, its present-day conditions, its perspectives, its tasks and functions, and its structure. It covers such topics as admisions, teaching, research, and co-operation between higher education and industry.

CHAPTER 1

BRIEF HISTORY OF BYELORUSSIAN HIGHER EDUCATION

The history of education in Byelorussia, like that of the culture of Byelorussia as a whole, is closely linked with the cultural heritage of the Great Russian nation. However, the socio-economic status of Byelorussia in pre-revolutionary Russia was very unfavourable. The tsarist government regarded Byelorussia as a marginal province of Russia and consequently took little interest in its spiritual and cultural development. Indeed, the tsarist government did much to suppress the endeavours of the Byelorussian people to develop their own higher education. Nevertheless, local intellectuals repeatedly pressed for the creation of a national educational institution, even if their proposals and projects were aimed at "a broader higher education for noblemen".

In the late 1830s, discussion focussed on the founding of an agricultural higher education institution patterned on a Russian model, to which the tsarist government gave its approval.

Thus, an agricultural school was organized in 1840 on the government estate of Gory Gorky, in the Orsha region. It had two levels. The first or lower level trained the working force of enserfed peasants for landed estates. The second or higher level was accessible only to members of the nobility and of other privileged classes. It "trained practical agronomists" to manage large manors. In 1842, by order of Nicholas I, the higher level became an independent educational institution for training specialists in advanced agronomy. Its students were exclusively children of hereditary and life noblemen, clergy and merchants. Some twenty years later, Gory-

goretsky Institute, as it was then known, moved to Saint Petersburg where it served as the basis for the Saint-Petersburg Agricultural Institute.

The events of 1905—1907 in Russia gave a fresh impetus to the demand for the creation of educational institutions in the north-western provinces of the Russian empire. In 1910, a teacher training college was founded in Vitebsk. The enrolment, however, was too small to meet the demand for teachers in Byelorussia. In 1917, for example, the college only graduated 16 specialists. Often, the college's financial plight put its very existence into question.

The problem of higher education in pre-revolutionary Byelorussia remained unsolved. Indeed, it could not have been otherwise, considering that the problem of providing primary and secondary education to the masses was still outstanding. At the outbreak of the Revolution, 80% of the Byelorussian population was illiterate.

The coming of the Revolution in October, 1917, would give the peoples of the formerly tsarist Russian Empire a great opportunity to be closely involved in political, economic, and cultural developments, specifically in the creation of systems of education and higher education.

The first higher education institution to be established in post-Revolutionary Soviet Byelorussia was a pedagogical institute founded in Vitebsk in 1918 as an expansion of a former teacher training institute. Later it spawned the institutes of public education in Mogilev and Minsk. These institutes trained teachers for various school levels, including that of preschool, in addition to librarians, journalists, and club and talent show managers.

The creation and the development of the system of higher education in Byelorussia was organically linked with the development of the socialist national economy and the political consolidation of the Soviet state. The plan to found the Byelorussian University of Minsk was on the agenda as early as 1918, but the institution did not come into existence until October, 1921, soon after the end of the Civil War, and the departure of foreign forces from Byelorussia. During the same period, other higher education institutions came into being : the first post-revolutionary agricultural Institute in Gorky, Mogilev region, in 1919. Later, in 1925, it would become the Byelorussian Agricultural Academy.

The characteristic feature of the place given in the first five year plan to the development of higher education in Byelorussia was the

priority given to industrial and technical higher training. Between 1930 and 1933, Electrotechnical, Chemical-Technological, Construction, and Peat Technology Institutes were set up in Minsk. Mechanical and Forest-Technical Institutes were created in Gomel.

At the beginning of 1933, there were 9 higher technical institutes enrolling 2,511 students making up 30% of the total number of students in the republic. During the 1930s the training of teachers in the BSSR increased. In 1931 the Higher Teacher Training Institute, eventually named after A. M. Gorky, was opened in Minsk. Teacher training institutes were also set up in Gomel, Mogilev, and it other cities. In 1932, the Byelorussian Conservatory was founded in Minsk to train musicians, vocalists, conductors, and musicologists. In 1937, the Byelorussian Institute of Physical Culture was founded to train teachers of physical education and coaches in different sports.

By 1941, there were already more than 21,000 students enrolled in Byelorussian higher education institutions studying to become specialists in industry, agriculture, health services, and public education. At the same time, more than 27,000 specialists holding higher education certifications were employed in the Republic.

The Second World War interrupted these achievements. Under very difficult circumstances, certain Byelorussian organizations including six higher education institutions and the leading scientific and pedagogical personnel of the majority of the institutes were evacuated beyond the reach of the invader.

Thus, the work of a number of the Byelorussian higher education institutions was resumed in new locations. In 1943, Byelorussian State University reopened at Skhodnya, Moscow region. The Minsk Medical Institute reopened at Saratov.

After the War and with the help of other Soviet republics, Byelorussia successfully rebuilt its economy and renewed the work of educational and cultural institutions. In the 1950s and 1960s the network of higher education institutions was intensively extended as a result of the rapid growth of industry, agriculture, and the health services. New higher education institutions were founded during these years : the Byelorussian Institute of Railway Engineers in Gomel, the Agricultural and Medical Institutes in Grodno, the Byelorussian Institute for the Mechanization of Agriculture in Minsk, the Mogilev Machine-Building Institute, the Minsk

Radio Engineering Institute, the Vitebsk Technological Institute, the Brest Building and Engineering Institute, Gomel University, and a number of teacher training institutes.

The years of the 9th and 10th five-year plans were most fruitful for the development of higher education in the BSSR because of the concern shown by the Communist Party and the Soviet Government for the training of national specialists. Various new universities and institutes were set up including the Mogilev Technological Institute, Grodno State University, the Novopolotsk Polytechnical Institute, the Minsk Institute of Culture, the Gomel Polytechnical Institute, and others.

Additionally, Byelorussian higher education has undergone qualitative changes. Training has been organized in a number of new specialities required by the evolution of the national economy, and by scientific and technological progress. These specialities include applied mathematics, automated control systems, automation and comprehensive mechanization of industrial engineering, microbiology, and vitamin production, to mention a few. Education has been enriched by the addition of new subjects and has been made more industry-oriented.

Byelorussia currently possesses a network of higher education institutions capable of training a sufficient number of specialists for practically all branches of the national economy. This network which comprises 33 higher education institutions trains more than 17,000 students per year in more than 200 specialities by means of full-time, evening, and correspondence instruction. More than 30,000 higher education graduates are being integrated annually into the social and industrial life of the Republic. During the first five-year plan, in contrast, less than 1,500 were being so integrated.

Nowadays, the population of the BSSR includes more than 450,000 university trained specialists. In other words, every tenth worker employed in the national economy is a higher education graduate, more than half of whom graduated in the 1970s. Today, every third Byelorussian is undertaking some form of higher education. As in the rest of the USSR, the transition to general and compulsory secondary education is nearly complete.

A remarkable feature of the higher education system of the Byelorussian Soviet Socialist Republic is the close contacts which it maintains with higher education institutions of other union republics. In particular, Byelorussian institutions train specialists for Azerbaijan,

Uzbekistan, Kirghizia, Latvia, and Lithuania in areas not covered in the higher education institutions of these republics. In turn, some Byelorussian young people are trained in the higher education institutions of the Russian Soviet Federated Socialist Republic, the Ukraine, and the Baltic Republics.

The wide development of the Byelorussian higher education system became possible, to a great extent, as a result of the all-around democratization of the whole educational system of the USSR as mandated by the Soviet Constitution. Thus higher education in the USSR is free of charge and accessible equally to all citizens regardless of race, nationality, sex, wealth, social status or religion. This collective guarantee is ensured by necessary legislation emanating from the appropriate organs of the Soviet State. Every year larger sums are appropriated for higher education. The material and technical basis of the educational system has steadily improved as have the conditions in which future specialists are trained.

CHAPTER 2

AIMS AND TASKS

The construction of communist society in the country and the continued growth of the economy require the high quality training of specialists in all areas necessary for the fulfillment of these tasks. The generalization of secondary education and the development of vocational and technical education at the secondary level in addition to the development of higher education have promoted the continued growth of the culture of the Soviet people, and higher Soviet labour productivity. Together they are serving to gradually overcome the essential differences between manual and intellectual work as well as those between urban and rural life styles.

Thus, Soviet society defines the principal aims of public education in the following terms : the training of qualified, educated, law-abiding builders of communist society, and the formation of citizens with a sound attitude towards labour, who are not only healthy, and able to work productively in different spheres of economic, social, and cultural construction, but willing to play an active role in social and public affairs so as to multiply the material and spiritual wealth of the country.

Higher education is the keystone of the whole system of public education, for it trains the lecturers and tutors for practically all other educational levels. It determines the general standards of teaching and the general level of the educational system as a whole.

According to the basic legislative tenets concerned with national education, the main tasks of higher education institutions are as follows :

— to give specialists a good knowledge of Marxist-Leninist theory, a profound theoretical knowledge of their specialities as well as requisite practical skills, and exposure to well-organized political and educational activities ;

— to foster high moral, patriotic, and physical qualities ;

— to constantly improve the quality of the training ;

— to conduct scientific research ;

— to complete textbooks and teachers' manuals ;

— to train teachers ;

— to improve the qualifications of teaching staff in all educational institutions as well as those of specialists drawn from higher education who are employed in corresponding areas in the national economy.

In fact, the general functions of higher education go beyond these concrete tasks. By means of broad participation in the work of social organizations, people's universities, clubs, lecturing societies, and publishing and broadcasting organs, higher education embodies a vast scientific and ideological potential for raising the people's educational and cultural standards.

By implementing these praiseworthy functions, higher education constantly perfects itself, and directs its efforts and huge creative potential towards the realization of its main mission : to accelerate social, economic, scientific, and cultural progress.

CHAPTER 3

NETWORK AND STRUCTURE

3.1. Network

Higher education in the BSSR is organized as a network of institutions of various orientations which by their structures and contents cover the main branches of the economy, of science, of technology, and of culture. The establishment of this type of system assumed that it was to acomplish two interrelated objectives : the training of specialists to satisfy the needs of the main branches of the national economy, and the covering of all the administrative regions of the Republic, taking into account such local peculiarities as the need for specialists, the availability of academic staff, the existing material and technological infrastructure, and other relevant factors.

At present, the higher education network of the Byelorussian SSR comprises 3 universities, 7 teachers' training colleges, 3 medical schools ; 10 technical, 4 agricultural, and 2 economic institutes ; 3 institutes of arts and culture, and 1 institute of physical education. Higher education establishments are located in all 6 of the regions of the republic.

In the Minsk region (the largest in terms of area), there are 14 higher education institutions ; the Vitebsk and Gomel regions have 5 apiece ; the Mogilev region, 4 ; the Grodno region, 3 ; and the Brest region, 2. In addition, there are 16 instructional centres organized primarily at institutions of higher education in order to render assistance to persons studying by correspondence.

One of the oldest institutions in the Republic is the Lenin Byelorussian University. It has 15,800 full-time, evening and correspondence students enrolled in its 12 departments in such fields as the natural

and exact sciences (biology, mathematics, physics, radiophysics, and chemistry) and the humanities and social sciences (literature, philosophy, history, political economy, etc.). This university is the principal training centre for specialists destined to work in the scientific, educational, and cultural institutions of the Republic. A number of other institutions were modelled after it.

Elsewhere than at the Byelorussian University, students can earn university diplomas at the recently opened universities at Gomel and at Grodno.

The rapid scientific and technological progress in recent years has brought about substantial changes in higher education curricula. While continuing to play their leading roles as the suppliers of specialists for scientific, educational and cultural institutions, the universities are sending more and more of their graduates into the sphere of production. This change has been induced by certain objective conditions which have turned science into a direct productive force and have enriched production with the latest of scientific achievements.

The universities have been making invaluable contributions to the development of science. That their staffs are composed of a great number of scientists and researchers explains why a considerable volume of fundamental and applied research is being undertaken and why new scientific ideas and concepts, are being elaborated.

The intensive development of various industries in Byelorussia has required that a number of technologically oriented higher education establishments be founded. Engineers are trained at the Byelorussian, Gomel, and Novopolotsk Polytechnic Institutes, the Byelorussian and Mogilev Technological Institutes, the Minsk Radio-engineering Institute, the Byelorussian Institute of Railway Engineers, the Vitebsk Technological Institute of Light Industry, the Mogilev Institute of Mechanical Engineering, and the Brest Institute of Civil Engineering.

The largest technical higher education establishment in the Republic and one of the largest in the Soviet Union is the Byelorussian Polytechnical Institute, a large centre for training skilled specialists. Since its opening, it has graduated over 71,000 specialists who constitute the bulk of the administrative staff and the specialists of big plants, factories, electric power stations, and construction sites in the Republic. The institute trains specialists in mechanical engineering, power engineering, metallurgy, civil engineering, and instrument making. The current enrol-

ment is 25,000 covering all forms of training study in 19 departments. This institution is a leading academic and research centre in the domain of science and technology.

Engineers specializing in the wood-working industry and in forestry and specialists in different branches of technology and chemistry are trained at the Kirov Byelorussian Technological Institute.

Specialists in radioengineering, electronics, communications, computers, and automatic control systems are trained at the Minsk Radioengineering Institute which was opened in 1964 as an outgrowth of the Radioengineering Department of the Byelorussian Polytechnical Institute. Within a comparatively short period, it has become a very modern establishment with extensive facilities for research and for training highly qualified personnel. It makes a major contribution to the development of the radioengineering industry.

The Gomel Polytechnic Institute, the youngest technical institute in the Republic, was created in 1981 as an outgrowth of a branch of the Byelorussian Polytechnic Institute. Although still in its infancy, it is gaining strength in part because of the great material and technical aid which it is receiving wrom the Gomel agricultural engineering plant which initiated the training of agricultural machinery specialists at this Institute.

A specific feature of advanced technical education in Byelorussia at the present time is the inclusion of elements of the humanities in the scientific curricula followed by future engineers and the practical combination of fundamental and applied sciences.

The agricultural higher education institutions of Byelorussia are represented by the Byelorussian Agricultural Academy at Gorki, the Vitebsk Veterinary Institute, the Grodno Agricultural Institute and the Byelorussian Institute of Agricultural Engineering. The key position among them is occupied by the Byelorussian Agricultural Academy, one of the oldest educational institutions of its kind. During the years of its existence, the Academy has trained many thousands of specialists in agriculture. Outstanding scientists, some of whom played important national roles in the development of agriculture were trained and then taught here. The problems which such institutes tackle nowadays include the intensification of agricultural production, the successful implementation of Food Programmes, and the development of agricultural and industrial complexes.

Pedagogical Institutes constitute a large number of higher education establishments in the Republic. They are the main sources of teachers for the public general education and nursery schools.

Three medical schools operate in Minsk, Vitebsk, and Grodno. They have not only trained thousands of physicians for the public health service of Byelorussia but many others who practice beyond the Republic's borders. The leading medical school is the Minsk Medical Institute which was organized in 1930 as an outgrowth of the Medical Department of Byelorussian University. This institute is chiefly responsible for developing medical science in Byelorussia and for organizing the public health service in towns and in the country.

There are two higher economic institutes in the Republic, the Byelorussian National Economic Institute named after V. V. Kuybyshev and the Gomel Co-operative Institute. The Byelorussian National Economic Institute occupies a particular position in the network of institutes in the Republic. Having originated as an outgrowth of the Law and Economy Department of the Byelorussian University, it has grown into the leading centre for the training of economists.

There are three higher education establishments specializing in culture and art : the Byelorussian Conservatory, the Byelorussian Theatre and Art Institute, and the Minsk Institute of Culture. The Byelorussian Theatre and Art Institute trains specialists in the theatrical arts. The Minsk Institute of Culture trains specialists in the sphere of cultural and educational work and in library science.

Highly qualified specialists in physical culture are trained at the Byelorussian Institute of Physical Culture which is also responsible for fixing the standards of sports activities in the Republic. This institute has trained a great number of athletes who have achieved outstanding results.

Thus, by means of its vast network of higher education institutions, the Byelorussian SSR trains specialists for virtually all branches of the economy and meets the requirements of all spheres of public life and production.

3.2. Structure

The control of the higher education establishments is firmly based on the principle of branch subordination. Each institution operates under the direct supervision of the ministry or the department of which it is

a part. All the institutes are under the authority of eight ministries and departments, namely the Ministries of Higher and Secondary Special Education, of Public Instruction, of Health Services, of Agriculture, of Culture, of Railways, of the Committee for Physical Education and Sports of the BSSR Council of Ministers, and of the Central Council for Co-operative Societies. The Ministry of Higher and Secondary Special Education is also responsible for setting the general guidelines for the methods to be used in trianing specialists.

All the higher education institutions of the Republic have a similar organizational structure and management system. The immediate supervision of the work of an institution is exercised by its rector. The specific guidance of educational, scientific, and administrative activities is exercised by vice-rectors, appointed by the ministry of the department concerned from among the most highly-qualified specialists.

The structures of higher education institutions may comprise branch campuses, faculties, departments, tutorial stations, research establishments, laboratories, libraries, clinics, dispensaries, sports and rest camps, experimental stations, experimental plants, training workshops, computer centre, publishing and printing houses, etc.

Faculties and departments are the principal units in higher education institutions. The department is the principal educational and scientific unit which conducts teaching and research among students. It also implements the training and the improvement of skills of scientific and educational personnel. The faculty groups together the activities of departments in corresponding fields and supervises the training of students for definite professions.

The principal problems of an institution are considered by its council which is directed by a rector's commission. Problems concerning a given facility are discussed by the relevant faculty council. In addition, higher education institutions include extracurricular organizations (students' scientific societies, students' residence councils, sporting and voluntary societies, etc.) that bring together students, post-graduates, members of the teaching staff, and other personnel.

This operational structure which characterizes the whole higher education system facilitates the successful execution of all tasks which individual higher education institutions are called upon to undertake.

CHAPTER 4

ADMISSIONS PROCEDURES

The admission of students, a major concern of higher education institutions, is governed by two basic principles : first, a democratic one which gives access to higher education to all persons who have graduated from secondary school, secondly, a meritocratic principle (which also considers the age and social status of applicants), which grants admission to the ablest of young people.

The rules governing admissions are formulated by the Ministry of Higher and Special Secondary Education of the USSR in co-operation with other bodies. The procedures are democratic in character and serve to admit the most capable and gifted applicants on the basis of competitive examination and selection. Only applicants under 35 may be admitted as full-time students. There is no age restriction for those who apply for part-time (evening or extra-mural) departments. The enrolment intake for each speciality and form of education (full- and part-time is determined in accordance with the needs of the national economy.

Applicants take entrance examinations in four related subjects the content of which correspond to what has been taught in the secondary schools. Thus students are ensured a continuity in the educational process from secondary school to the tertiary stage.

In addition to the results of the competitive examinations, a system of competitive indices used to evaluate applicants includes an average mark from each applicant's school-leaving certificaton, which allows his diligence and abilities to be taken into account.

Moreover, admissions rules favour certain categories of applicants. School-leavers who received medals for their scholarly achievements or who completed their studies with distinction at specialized secondary or vocational (technical) schools are required to take only one examination rather than four. Their admissions are then conditional on their receiving the mark of "5" on the examination. Such applicants are in fact permitted to enter higher education without taking entrance examinations if they wish to take up specializations considered to be of paramount importance to the national economy or ones in which there is a recognized shortage of specialists.

In some specialities, applicants whose average marks in their school-leaving certification are not lower than 4,5 are required to take only two examinations. By these means the most capable of secondary school graduates are encouraged to enrol in higher education.

Those applicants who have been employed for two or more years are given priority over others in student enrolment. The same is true for front-rank workers who are seconded to higher education establishments by industrial enterprises and state and collective farms. With regard to the admission of part-time applicants, priority is given to those who are employed at enterprises related to the courses in which they wish to enrol. Priority is also given to those who come from related specialized secondary and vocational (technical) schools, as well as to army reservists.

The whole admissions procedure is carried out by the admissions commission of each institution which is headed by its rector. Such commissions include the vice-rectors, the deans of faculties, representatives of the institutions' teaching staffs, and representatives of certain public organizations.

Byelorussian institutions of higher education have developed certain measures for selecting applicants including organizational, methodological, and practical measures. One of the most important measures is career guidance for prospective candidates who are provided with ample information on courses of study and on prospects after graduation. In order to accomplish this task, the institutes publish special issues of their newspapers as well as informational booklets. They publicize the deadlines in the local press for the registration of applicants, and they organize series of lectures and informal talks at schools and enterprises and on radio and television. Higher education establishments also

hold "Open Days" and arrange excursions and talks on their premises, and initiate special courses, for young mathematicians, physicists, biologists, etc.

To attract more applicants and to help them review before the entrance examinations, institutions organize preparatory courses of the three accepted forms : resident, part-time, and correspondence. This variety in the available means of preparation is particularly valuable for employed young people and for those wishing to resume their studies after a long period since they graduated from secondary school. Students enrolled in preparatory departments who succeed in their graduation examinations are admitted to the relevant higher education institutions without having to take entrance examinations.

Preparatory departments have become an important means for replenishing the ranks of the intelligentsia by young workers and peasants who can be admitted to them after a minimum of one year of employment. Enrolees of these departments are offered state scholarships and accommodation in hostels. Byelorussian institutions of higher education enrol over 4,000 students annually who have graduated from their preparatory department.

The measures taken in order to identify candidates for higher education in Byelorussian institutions give rise to an annual competition rate of 2 to 3 candidates for every vacancy. Indeed, the number of competition in some specialities is larger. Thus the most capable and well-trained graduates of secondary, vocational, and specialized schools as well as the best representatives of workers, and peasants gain admission to higher education.

In 1982, the higher education institutions of Byelorussia admitted 36,100 persons. Among these 24,100 were admitted to fulltime programmes, 3,000 for evening programmes, and 9,000 for correspondence programmes.

CHAPTER 5

ORGANIZATION OF THE CURRICULUM

The process of teaching and learning is organized on the basis of curricula which are formulated by the state and are mandatory for all educational institutions. They are designed to satisfy the qualification requirements for each kind of specialist. They specifiy the forms of teaching, the number and volume of subjects to be covered, the amount of time allotted to each class, and the length of each programme calculated in number of courses. The curricula are organized on the bases of course systems. Thus, students must cover the curriculum of one course in one year. Each course in its turn is subdivided into two semesters per academic year.

Higher education in the Byelorussian SSR, as well as in the USSR as a whole, has three types of courses — full-time, evening, and correspondence courses. In Byelorussia, 62% of students are enrolled in full-time courses. These students devote all their time to their studies ; evening and extra-mural students combine study with employment. The average length of full-time programmes is 5 years, depending on the speciality, while evening and correspondence programmes take longer to complete.

Full-time students attend classes six days a week for six hours each day ; evening classes meet four times a week for four hours after work.

The principal activities of extra-mural students include the writing of course papers and the undertaking of other course projects. These students must also attend pre-examination question sessions and intro-

ductory and review lectures, undertake laboratory work, and take sessional examinations.

Students who remain employed are granted certain privileges : paid leave for the periods of sessional examinations and for the preparation of papers and projects. In addition, they receive an extra day-off each week.

The promotion of a wide variety of forms of higher education bears witness to its democratic character. Thus citizens are enabled to choose the forms of education most convenient for them to combine education with productive work and to improve their qualifications without discontinuing their employment.

The system of higher education provides instruction not only in specific disciplines but also in more general areas. Not only are the most up-to-date achievements in specific fields related to the contexts of their broader disciplines, but each course includes some instructions in the history of the Communist Party of the Soviet Union, Marxist-Leninist philosophy, political economy, and scientific communism.

The general pattern of instruction is a combination of lectures, seminars, laboratory classes, independent work, course and graduation projects, practical training, and practice. Each activity has its own characteristic but is at the same time subordinated to the basic aim, namely the formation of highly qualified specialists.

Lectures play an extremely important role in shaping the creative abilities and the world outlooks of specialists, in laying the theoretical bases for the systematic acquisition of knowledge in chosen fields, in imparting broad professional outlooks to students, and in increasing their general cultural levels. In the process of direct communication between students and lecturers, who as a rule, are leading scientists and teachers, the prospective specialists are given the opportunity to master the fundamental principles of chosen disciplines and to begin making contributions to them.

The aim of practical classes is the development of student's practical abilities to apply the knowledge of theory which they have acquired to the solution of concrete tasks. Practical classes are widely used in the teaching of general subjects. Experience gained in Byelorussia indicates that the main ways in which practical classes can be improved are as follows : intensification of the problem orientation of teaching, a close connection between practical classes and the content of lectures, and

the assignment of individual tasks which take into account students' abilities and levels of knowledge.

The object of seminars is to provide an in-depth study of a particular subject. The leaders of most seminars employ the discussion method with the aim of delving more deeply into the theoretical propositions which have been covered in the lectures.

An important role is given to laboratory classes in which students master the latest techniques for conducting experiments and apply them in a search for solutions to practical problems. An ever growing number of research elements are being introduced into laboratory classes, thus increasing their scientific character.

Those methods of conducting practical classes which most actively stimulate the independent thinking of students are gaining increasing popularity. Business games, problem solving, and the creation of concrete production situations are successfully employed in a number of institutes.

Much stress is also placed on the practical training of students. Its aim is to consolidate the knowledge obtained by students by the in-depth study of the work which is done by the enterprises where they undergo their practical training. Students are expected to master production experience skills and the techniques of advanced labour management, to acquire experience in organizing public and political activities, and to undertake educational work in workers' collectives. The practical training of students is carried out by the joint efforts of institute academics and experts from enterprises and establishments. Such training has become more and more like a creative activity of future specialists, one which often has considerable economic value.

The preparation of graduation papers or projects is the concluding stage in the specialized training of students. The successful defence of a thesis entitles the graduate to be awarded the relevant certificate of qualification. The graduation project reflects in a condensed form the whole complex of general and specialized knowledge which the student has acquired during his years of study.

There is a growing tendency for students to tackle concrete economic and technological problems in their graduation papers. For example, at the auto-tractor department of the Byelorussian Polytechnic, groups of students carry out complex graduation projects on problems suggested by the Minsk Tractor and Automobile Plants. The individual task of each student is part of the whole project.

In modern higher education, the teaching process is tending more and more to evolve into a form of independent research work conducted by students. Much attention is being given to this important tendency, and much is being done to continue the students' scientific activities after class hours.

Students are evaluated both continuously by means of intersession or current evaluations and by final evaluations. Intersession evaluations include test papers, homework, colloquia, laboratory reports, seminar classes, etc. The final evalutions which include course and final examinations, end-of-term tests, and the defence of production practice, course projects, and graduation papers — aim at profound and systematic checks of the knowledge which students have of subjects or groups of related subjects.

At non-technical institutions, particular attention is paid to final examinations. At technical institutions, stress is placed on the defence of graduation projects. To administer these final evalutions, state commissions are set up. These include leading academics and scientists and other experts drawn from outside of academic milieux.

Measures of a complex nature have been taken to provide for the ongoing improvement of Byelorussian higher education. Much importance is given to such questions as the introduction of new curricula and programmes and the revision of educational documents in accordance with state requirements and the needs of the national economy. The optimization of the teaching process is achieved by several means : the integration of technological plans and teaching by the creative revision of the curricula, the introduction of new disciplines, the elaboration of scientific principles of planning and organization, the intensification of the teaching process, the publication of updated educational and methodological literature, and the elaboration and promotion of progressive forms, methods, and technical means of instruction.

In their daily work, higher education institutions elaborate and apply so-called comprehensive programmes which call for the teaching of general education subjects and discipline cycles in order to accomplish the intra- and inter-disciplinary connections needed to intensify the systematic character of teaching.

The improvement of the teaching process is ensured by the concerted activities of all bodies concerned with higher education, e.g. departments, faculties, councils on college methods, higher education committees, nation-

al scientific and methodological councils, and intercollegiate teachers' methodological societies. They act together to solve a number of problems related to the use of Marxist-Leninist methodology, pedagogics, psychology and sociology, management theory, economic and mathematical methods, and computation methods as applied to the effective organization of the teaching and education process.

During the 10th five-year period, the 15 intercollegiate scientific and methodological societies dedicated to various subjects (Russian literature, Byelorussian literature, mathematics, physics, chemistry, economics, etc.) elaborated eight annotated catalogues on general education and various special subjects. The latter included presentations of certain college's experiences concerning the instructional use of business situational games and the complex teaching of physics and mathematics and other applied disciplines. They have also prepared 6 collections of instructional materials and formulated recommendations as to how to prepare for and to take entrance examinations.

The leading institutions : the Byelorussian University and the Byelorussian Polytechnic Institute operate teaching and methodological centres the functions of which are to formulate recommendations for the improvement of the teaching of disciplines concerned w th science and technology and to publicize advances made in these areas.

To extend the educational process into the extracurricular realm, the following activities have been initiated : a student olympiad entitled, "The Student and Scientific and Technological Progress", reviews and contests sponsored by college libraries, educational films, technical means of instruction, as well as conferences and seminars for college authorities and teachers.

Nowadays as the volume and significance of students' individual work is increasing, the role of professional literature in the training of specialists is growing considerably. Acting on this principle, college professors and teachers put in a large amount of work devising and publishing manuals as well as educational and auxiliary materials. During the 1976—80 period, BSSR publishing houses printed 303 textbooks and manuals. Moreover, educational literature complexes were created in order to test education theories and techniques before publishing them in final form.

The modern processes of information technology are now being applied in all areas of higher education, thus permitting efficacious

solutions to one of the most urgent problems of instruction : that of processing and making available to students the continually increasing amount of information. Technical means of education such as educational cinema, television, projection and recording equipment, computers, and testing and training devices are being widely introduced into the instructional process. In 1980, Byelorussia's higher education system made use of 60,000 computers, over 6,400 units for testing and self-evaluation, 14,000 slide series and film strips, and 4,700 full and fragmentary educational films. In a number of institutes, closed circuit television systems and television equipment are in operation for classroom use. In the Byelorussian University, an automatized television instruction system is used which makes possible the combination of communication and illustration to solve a wide range of didactic problems. In the Byelorussian Polytechnic Institute, special display classrooms based on programmed learning and dialogue optimization systems are being used.

CHAPTER 6

THE ROLE OF RESEARCH

With its tremendous scientific potential, its large number of scientific and pedagogical workers, its resources in laboratories and other scientific apparatus, Byelorussia's higher education system makes a substantial contribution to the development of Soviet science.

Many institutions have been characterized in recent years by an expansion in the scope and the number of research projects which they have undertaken. In addition to their use in the national economy, these projects have contributed to the teaching process and have resulted in better trained students. To undertake scientific investigations is a fundamental duty of all higher education teachers, not to mention trained researchers. Research is conducted by professors, assistant-professors, teachers, post-graduates, undergraduates, laboratory assistants, and by scientists and research workers in research institutes, laboratories, scientific and industrial sectors, departments, and experimental stations affiliated to higher education establishments. Such efforts are directed primarily towards the solution of theoretical problems. These include the accomplishment of certain targeted objectives of the national economy, the preparation of text-books and teaching aids, and the undertaking of research work of a pedagogical nature. Higher learning institutions take part in all of these activities. In addition they also promote the achievements of science, technology and culture. It is notable that students play major roles in all those activities.

Higher education institutions carry out scientific investigations in close co-operation with the various research institutes of the Byelorussian

Academy of Sciences, with specialized scientific establishments, and with other enterprises and organizations. All these organizations coordinate their research programmes, organize joint investigation projects, convene scientific conferences and meetings, and publish the results of co-operative work. Research is financed by the state budget and through agreements concluded by higher learning establishments with enterprises and organizations. The most important of the research and experimental design projects which are elaborated are included in the research plans of the ministries and departments under whose authority these establishments operate. Some projects will find their way into the national economic plans of the Republic.

The research potential and output of Byelorussia's institutions of higher education have now reached such high levels that these institutions are regularly called upon to solve major scientific and technical problems which have a considerable bearing on the scientific and technical development of the Republic. In addition, work on these problems serves as a means of improving the training of highly skilled specialists. The research facilities available include two research institutes, a large number of experimental and specialized laboratories, co-operative higher education centres which grant technical assistance for specific projects, specialized design offices, experimental grounds, and standardization and metrology services. More than 600 departments of one kind or another are actively conducting investigations.

Thanks to these efforts the total research effort of Byelorussia has been growing constantly both as to volume and as to sophistication and profitability. During the years of the 10th 5-year plan alone, the volume of research carried out in institutions of higher education increased by a factor of 1,8. The share of major projects contracted in these institutions went from 27,8% to 54,3% and has now reached the 70% mark. The economic effect in the national economy of the use of the results of this research increased more than 3,5 times. The effectiveness of this research work is also borne out by the publication of studies, textbooks, manuals, and the thousands of practical inventions resulting from it. It has in fact become a rule that scientists in higher education take an active part in the implementation of union-wide, national, special, and academic research programmes.

The leading research-oriented universities are the following: the Byelorussian, Gomel, and Grodno Universities, the Byelorussian Poly-

technical and Technological Institutes, the Agricultural Academy, the Institutes of Railway Engineering and National Economy, and the Minsk Radiotechnical, Pedagogical, and Medical Institutes.

A characteristic feature of research at these higher education institutions is the extraordinary variety of problems which it has investigated. In-depth studies and experiments are carried out in different fields of the natural, physical, and social sciences. Byelorussia's higher education establishments, which boast a large number of social scientists, are engaged in research on the historical experience of the CPSU as well as of other Communist Workers' Parties in such matters as the theoretical issues of developed socialism, the betterment of social relations, the increase in the effectiveness of public production, and the development of the Soviet Socialist way of life. They also study the effects of the scientific and technological revolution on socio-economic processes.

Among the important projects in theoretical and applied research which have had important results, special mention should be made of those in the sphere of the natural and technical sciences. Certain investigations undertaken by university scientists in the fields of mathematics, physics, chemistry, geology, biology, history, and linguistics have won wide recognition. Within the framework of Byelorussian State University, fruitful work is being conducted by investigators of the affiliated research institutes of applied physical and physical-chemical problems. Outstanding contributions have been made by the teaching staffs and students of the biological, geological, economic, and other faculties of the Gomel University to the solution of such problems as the development of the national economy in the region.

The greatest number of scientists are engaged in research work in the sphere of technical science. They are credited with many important theoretical and applied investigations. The Byelorussian Polytechnic Institute, the largest centre of technical sciences in the Republic, has concentrated research efforts primarily on the development of new modern structures and the assembly of wheeled tractors and heavy-duty trucks, on the improvement of foundry processes, the pressure processing of metals, on engineering and instrument-making, on the development of energetics and architecture, and in the construction industry. Scientists engaged in problems of construction have devised and successfully implemented centrefuge columns and frames for industrial buildings which can

be assembled very cheaply. In addition to the economies thus made, these processes have permitted the automatization of the labour-intensive processes involved in making ferro-concrete structures.

In the area of industrial chemistry, the chemists of the Byelorussian Technological Institute are particularly known for their work in the development of concentrated mineral fertilizers, glass-crystalline materials, economic methods for the production of phosphorus salts, and improvements in the large-scale production of glass, lacquer-dyes, and oil-chemical products.

Scientists at the Minsk Radiotechnical Institute are particularly concerned with the creation of radio-electronic and computing machines. They have designed and put into production dozens of new technological processes for the manufacture of microelectronics components which considerably increase labour productivity, improve the quality of production, and conserve precious materials.

Research associations of the Republic's agricultural institutes direct their efforts towards the solution of such problems as the intensification of agricultural production on the basis of agro-industrial integration and specialization, the promotion of rational methods of farming and using natural resources, the wide application of modern techniques and technologies, and use of the latest advances in biological and chemical sciences.

Important investigations are also being carried out by scientists in medical and pedagogical institutes, as well as in institutes of art and culture. Their work favours the further development of public health services of education, of national culture, and of art.

Scientific research has considerably influenced the organization of the educational process, the qualifcations required of teachers, and the quality of the instruction given. Special research into problems of higher education, conducted in institutions of the Republic, aims at improving the content of education and the forms and methods of teaching, at increasing the effectiveness of teaching staff and the cognitive activity of students, at the elaboration of methodological foundations, and at the greater use of technical means of education including greater psychological understanding of the pedagogical questions of higher education as well as the production of new textbooks and methodological material. Outstanding results have been obtained in these fields of research.

The important achievements in research at Byelorussia's higher education institutions have been favoured to a great extent by such organi-

zational measures as careful planning, the setting up of interdepartmental and interinstitute scientific associations, the concentration of efforts on specific target areas, the strengthening of material-technical bases, and the cementing of ties with industrial enterprises and scientific establishments.

As said earlier, efforts are made to include students in all aspects of this research activity. They take part in research projects in their laboratory work and indirectly, through the lectures which they attend. They become ever more involved in research through their term and diploma projects. Thus their creative abilities and scientific skills are improved.

Finally, mention should be made of the many science fairs to which students can submit projects and the scientific reviews to which they can submit papers for publication as ways in which student skills in all areas of science are improved and sharpened outside the classroom. These activities, it should be added, take place in close co-operation not only with the BSSR Ministry of Higher Education but with the trade union and Komsomol bodies.

CHAPTER 7

CO-OPERATION WITH INDUSTRIAL ENTERPRISES AND SCIENTIFIC INSTITUTIONS

The years of experience accumulated by Byelorussia's higher education institutions is convincing evidence that the solution of certain crucial problems confronting higher education can be more successfully found if the links between higher education and economic practice are developed and consolidated in every possible way. It is through such co-operation that higher education can both exert a more beneficial influence on the spheres of production, and derive benefits from the latest achievements in production.

Higher education institutions in the BSSR co-operate with many enterprises, organizations, and research institutions in joint efforts to solve many problems. These institutions also co-operate closely with the institutions of the BSSR Academy of Sciences. Outstanding scientists are invited to give lectures, to supervise industrial practice and the annual graduation projects, and to train scientific and educational personnel.

A qualitatively new form of co-operation has been initiated between higher education establishments and industrial enterprises, organizations, and scientific institutions. It takes the form of *educational-scientific-industrial joint ventures (ESIV).* ESIV's facilitate the solution of scientific-industrial problems by effective and purposeful means. They involve outstanding scientists and experienced specialists in the national economy in the teaching of students. In particular, they make effective use of the production base in the process of teaching scientific subjects in order to increase the standard of proficiency required of fully trained personnel.

The ESIV's are the result of voluntary co-operation based on contracts between institutions of higher learning and industrial and scientific enterprises. ESIV's channel their work into a wide range of educational, scientific, and social areas. The first ESIV's were set up in Byelorussia in 1974. They linked the Byelorussian Polytechnic Institute, the Minsk Automobile Plant, and the Minsk Tractor Plant. At present, over 35 such ventures are in operation in Byelorussia. In 1981, over 80 industrial and agricultural enterprises, combines, trusts, and plants co-operated with 11 higher education establishments within the framework of educational-scientific-industrial joint ventures. Ten scientific-research and design institutes and over 100 laboratories, shops, and technological and design offices also participated in such co-operative ventures involving some 3,500 teachers, research workers, engineering staff-members, and industrial experts.

Some 6 000 students were involved in the work of such educational-scientific-industrial joint ventures.

As a result of the initiation of ESIV's, it has become possible to considerably improve the training of personnel. An increasing number of students have completed their graduation and industrial practice in leading enterprises and scientific centres thus improving the professional training of specialists. Students carrying out their projects at industrial units are provided with all necessary facilities. They have drafting rooms, equipment, and technical documentation placed at their disposal. They can also use industrial laboratories, testing grounds, and the apparatus of both for their laboratory and practical classes. By introducing specialized courses tailored to the requirements of the various enterprises, institutions of higher education cater to the needs of factories and plants. The close contacts between institutions and enterprises have led to the creation of departmental branches staffed with leading specialists and scientists based at enterprises and institutions. There are now more than 20 such arrangements.

As a result of the scientific potential of higher education, industrial enterprises are successfully solving production problems. The economic efficiency of research due to joint ventures has grown by 60% in recent years.

All these arrangements have given full scope for the further development of such forms of co-operation between higher education and

factories and plants as the creation of joint specialized research groups and laboratories, the setting up of centres for training scientists, and new forms of scientific and technical work for students.

As a basic principle, the unity of higher education, on one hand, and factories and other enterprises, on the other, permeates the whole system of personnel training, including the planning of such training and the assignment of specialists to specific positions. Co-operation between higher education, enterprises, and scientific institutions is brought about by the very essence and mission of education.

Representatives of different branches of the national economy participate in the various state commissions for the assignment of jobs to graduates. In response to their proposals, higher education institutions make corrections and changes in the curricula and the plans for training personnel. Lately, the scale of this co-operation has been considerably expanded as a result of co-operative work and a survey of employment opportunities available for graduates.

An additional postgraduate one-year course of study offered jointly by enterprises and higher education institutions helps young specialists acquire the practical and organizational skills required in specific jobs, particularly in the positions they will be accepting. Thus they will become fully seasoned specialists in the shortest possible time.

CHAPTER 8

TEACHING STAFF

The successful accomplishment of the diverse educational, scientific, and cultural tasks facing higher education is dependent first and foremost on the creative endeavours of the teaching staff. The teachers are entrusted with one of the most complicated and important assignments, that of preparing young Soviet people to be an active force for social development.

As a result of its staffing policy, Byelorussian higher education has made considerable headway in providing educational establishments with skilled staff. At present the Byelorussian institutions of higher education are staffed with 13,500 lecturers of whom 47.8% hold the academic degree of candidate or doctor of science and the ranks of assistant professor or professor. The years of the 10th five-year plan saw a 3.8% increase in the number of lecturers with academic degrees. Particularly high growth rates have been attained in such fields as physics, mathematics, chemistry, engineering economics, and philosophy. Sixty-five per cent of the lecturers at the medical colleges hold academic degrees. Fifty-five per cent of the republic's lecturers have lengths of service of over 10 years, and women account for 40% of the entire teaching staff.

Institutions of higher education have the following scale of academic posts which are filled by members of the teaching staff according to their qualifications : head of department, professor, visiting professor, assistant professor, senior lecturer, lecturer, and assistant lecturer. Vacancies are filled for 5-year terms by means of competitions.

8.1. Staff-recruitment and Post-graduate Studies

A well-defined system of staff training has taken shape in Byelorussian institutions which provide support to staff members who are actively engaged in research and are working for academic degrees. Various measures of support include 1-year post-graduate courses and leaves of absence. Those engaged in research in addition to their teaching duties are provided with research and other facilities and are supervised by senior staff members.

It should be emphasized that the continuity of the higher education system is provided for by courses of study which aim at moulding future generations of researchers and educators capable of imparting their knowledge and experience to the coming generations of students.

The best students, those who show a marked capacity for research and teaching, are recommended for enrolment in post-graduate courses. Such courses are offered by the majority of the republic's institutions and are responsible for training candidates of science in more than 200 specialities. Over 700 post-graduate students complete these courses each year. The kinds of post-graduate courses offered are determined by the requirements of higher education in accordance with the existing lists of specialities. The preliminary entrance examinations are open to all graduates who have previous experience, both practical and theoretical, in their chosen fields.

Post-graduate courses are offered as full-or part-time programmes thus making it possible to draw an increasing number of specialists from various branches of the national economy into academic research and teaching. The supervision of post-graduate students is the responsibility of senior members of the teaching staffs. Post-graduate study ends with the defence of a thesis for the degree of candidate of science. The thesis is expected to make a significant contribution of scientific and practical importance to a given field of knowledge.

During the past few years, a new form of post-graduate studies has appeared in which enterprises, organizations, and educational establishments that do not run training schemes of their own can send their specialists to the appropriate higher education courses. This form contributes to the successful solution of the question of personnel training on an interdisciplinary and territorial basis.

The demand for highly qualified senior staff necessitates the training of doctors of science, holders of the senior higher degree in institutions of higher education who are called upon to head schools, departments, faculties, and large scientific establishments. To promote the systematic training of D.Sc.'s, higher education institutions can grant candidates of science who have made considerable headway in the elaboration of scientific and applied problems two-year leaves of absence to enable them to prepare doctoral dissertations. Annually scores of lecturers in Byelorussia are granted such leaves.

Moreover, collaboration with industry creates favourable conditions for substantial increase in the number of researches. Under the guidance of eminent scientists, a great number of workers have defended their doctoral theses, while others have taken post-graduate courses or have studied in special groups where they were prepared to take their post-graduate examinations. In return, industrial enterprises and research institutes have rendered assistance to applicants from higher education institutions and have provided them with the necessary equipment, apparatus, and literature for conducting research. Such co-operation gives rise to new procedures which stimulate the professional growth of the cadres in charge of research. Thus, for instance, at the "Minsk Tractor Works — Byelorussian Polytechnic complex" a coordinating centre for training researchers was set up which pools the efforts of both scientists and industrial workers and coordinates those investigations of theirs which are aimed at designing universal tractor-cultivators. They channel the energies of these workers into finding solutions to the most typical production problems, and creating conditions favourable for the practical applications of their theses.

The existing system of degrees, reflecting the qualifications of scientific workers, is supplemented by a system of teaching grades — professors and assistant professors, testifying to the merits of the holders of these grades as teachers and researchers.

Soviet higher education, which is constantly developing and accumulating new advanced experience, demands of the teaching staff a high level of theoretical and practical knowledge. This characteristic plus the existing competition system used for filling staff vacancies is also subordinated to these tasks.

The consistent implementation of this staffing policy has made it possible to form highly-trained teaching cadres in Byelorussia. At the

same time, much still remains to be done to further meet the demand for lecturers. The number one task is to expand the training of Doctors of Science and to provide the newly-founded and the remote institutions with highly-trained specialists. At present this task is being carried out by having them rendered assistance by the outstanding older establishments through the loan of teaching staff. Scientists are also invited from similar research institutes and higher education establishments in other Union Republics.

CHAPTER 9

STUDENTS

The principal task of higher education is to impart profound theoretical knowledge, professional skills, high moral qualities, and an active attitude to life to the younger generation. This task is being accomplished at all stages of higher education, beginning with the training of undergraduates and continuing with the further instruction and education of young specialists.

The development of higher education in Byelorussia has been marked by the constant growth of its student enrolments. During the 1921—1941 period, these enrolments increased from 3,433 to 21,538, that is, more than sixfold. Student enrolments mushroomed during the post-war period, a development related to the rehabilitation of the national economy along with the rapid development of industry and educational, scientific, and cultural centres. At present, more than 178,000 students are trained at higher education establishments in the Byelorussian SSR including those enrolled in evening and correspondence classes. In other words, 1 out of every 5 citizens of the Republic is enrolled in a course of study.

The class structure of the student population corresponds to that of the Republic. Nearly fourty-eight per cent of the students are industrial workers and collective farmers or children of parents in these occupational categories. Fifty-two per cent are office workers or children of these workers.

Students have the free use of laboratories, libraries, reading rooms, computer centres, sports centres and their equipment, and other facilities. They are represented in organs concerned with the improvement of the

teaching process, ideological educational work, the progress of their studies, discipline, the procedures for granting stipends, the provision of dormitory accommodations, and other questions relating to study and everyday life.

Students play active roles in the social lives of these institutions, in students' scientific societies, sports groups, and clubs, and amateur performers' groups. All graduates are guaranteed jobs in their chosen fields.

Students enrolled in full-time degree courses are granted scholarships the amounts of which depend on their scholastic progress and on their participation in socially useful work. Those students who get good or excellent marks are the first to receive stipends. Students who are seconded by employing enterprises to higher education institutions receive grants 15% higher than those of ordinary students. Brilliant students receive grants 25% higher. Those students who successfully combine outstanding scholarly achievement with scientific and social activities receive special, particularly generous grants.

The institutions of higher education in Byelorussia attach importance to the material, environmental, and recreational side of student life. Students who come from the country are assigned to rooms in hostels. They can have meals at student canteens or in refreshment rooms located in academic buildings and in the hostels. Medical care is given at polyclinics and at the medical centres of higher education institutions. A vast amount of work is being done to improve the living conditions of students. The 10th five-year plan called for the construction of hostels that now accomodate 10,000 students. The catering network which provides inexpensive meals increased its capacity by more than 2,000 places. A network of medical care units and recreational centres has also been built.

Great attention is being paid to students' physical and cultural recreation. Sports complexes, gymnasiums, stadiums, swimming pools, and sports grounds are freely available. There are 156 sports grounds, 104 gymnasiums, 35 ski-depots, 22 shooting galleries, and 5 swimming pools attached to institutions of higher education. Of the full-time students, 70% practice sport regularly. More than 20,000 students have joined sports groups, some of which are at the intercollege level. These groups have in fact become the employers of the top sportsmen. The Minsk Radio-Technical Institute established a special intercollege department to lead the activities of these groups. Byelorussian students engaged in sports are associated with the voluntary association "Burevestnic". As a

result of the various sports training programmes in Byelorussia, the number of students with CTO (Ready for Labour and Defence) badges and official sports ratings is constantly growing. The all-USSR and all-national sports teams include 140 students. Twenty-two of them participated in the XXII Olympic Games and won 21 medals, with 9 gold medalists among them.

The cultural life of the students is very rich. There are choirs, amateur drama and ballet groups, art studios, orchestras, and fine arts clubs. Amateur groups of the Byelorussian State University, the Polytechnic Institute, and the Institute of Physical Education have participated in all the World youth-and-student festivals. Of the various amateur art groups, 21 have been awarded the title, "People's (Narodny) Group for Great Achievement in the Development of Amateur Arts activities". Among them are the amateur cappella choir of the State University, the so-called theatre of "Poetry" of the Byelorussian Technological Institute, the dance ensemble of the Minsk State Pedagogical Institute, and the orchestra of the Byelorussian Polytechnic Institute.

The important tasks of combining educational and social processes in the training of future tutors and organizers devolves on the faculties of social professions which exist in all institutions. These faculties offer instruction to students in second social professions. Students can study in departments concerned with print journalism, lecture-and-propaganda, photography, choregraphy, amateur cinema production, bibliographical compilation, and other areas.

A department of journalism, as an example, trains social writers and newspapermen. Students who study in such departments acquire journalistic skills, study the history of Russian, Soviet, and foreign journalism as well as activities of famous publicists, learn the techniques of public relations, study the work of newspaper and magazine editorial offices, radio-and-TV centres. as well as the foreign press, and prepare newspaper and magazine materials.

Much importance is given in the training of students to the development of their personalities and their social awareness. One of the most effective ways of drawing students into social labour projects is to induce them to join students' building teams and voluntary students' units. About 30,000 students take active parts in the achievement of national economic goals such as the construction of dwelling, offices, industrial enterprises, livestock complexes, farm buildings, etc.

Higher education institutions have accumulated a certain amount of experience in the area of student socialisation. It is based on a combination of labour and ideological, political, moral, aesthetic, and physical education. Communist education has become part and parcel of the curricula and extra-curricula activities of all higher education institutions. It reflects not only the educational tasks and the ways in which they are conducted but also the definition of assessment criteria. Different methods for promoting the active involvement of youth in the united system of educational and social-political activities are envisaged.

An important place is given to the communist education of students by such means as "Leninsky zachyot" (Lenin Lessons). These are student research contests based on political information and social and political practice. They include fact-finding visits to places of great historic interest. Thorough knowledge of Marxist-Leninist theory and the active social life of each student contribute to the formation of a high-principled intelligentsia, displaying a high sense of duty and responsibility towards society.

CHAPTER 10

THE TRAINING OF SPECIALISTS AND THEIR ASSIGNMENT TO JOBS

A characteristic feature of the Soviet educational system is its planned development by which it is linked with all the branches of the national economy. The basic principle of the unity of education and industry characterizes all activities in higher education including the planning of training, job assignment, and the further employment of specialists. Work in educational establishments is strictly coordinated with the development of industry and the national economic plan.

From the start, higher education in the Byelorussian SSR organized its work, training specialists and setting up new institutions and specializations in accordance with the requirements and the prospective development of the republic's economy, its total education system, its health services, and its culture. Thus, during the 1960's and 1970's, the extensive development of those Byelorussian industries dealing with radio engineering, chemicals, machine-biulding, and food necessitated the setting up of related specializations in higher education institutions and gave rise to the opening of new colleges, e.g. the Minsk Radio-Engineering Institute, the Mogilev Machine-Building Institute, the Novopolotsk Polytechnic Institute, the Mogilev Technological College, and the Vitebsk Technological College of Food Industries. Continued rapid growth of higher education took place during the 9th and 10th five-year periods. Specializations in certain branches of science, technology, and industry, viz, computer technology, the automation of machine-building, powder metallurgy, the technology of instrument-making, electrochemistry, and

several others came into being. During the 10th five-year period alone more than 15 new specialities and specializations were set up.

The planning authorities of the Byelorussian SSR have established a new system for setting the quotas of specialists with university education. Two methods are used to that end, the job classification method and the normative method. The projection of personnel requirements according to the former method is based on the drawing up of job classifications which take into account the country's economic development, the opening of new industrial units, structural reorganizations, the transfer of previously prepared specialists, all of which make possible the determination of the demand for further specialists.

The normative method is based on the determination quotas for specialists in given fields considered in relation to the size of the population. Projected indices are subjected to thorough appraisal by planning experts and by the organizations concerned. Thus the perspective need for each category of specialist is estimated and is included in the 5-year and annual plans for the training of higher education personnel.

New economic and social conditions require the elaboration of new standards for the planned evolution of higher education. Thus it will be necessary to provide for the coordination of personnel training programmes, the prediction of higher education development trends, the specialization of institutions, and the greatest effectiveness in the employment of specialists in the national economy. The first steps are being taken by planning organizations and by higher education administrative organs. They have already given rise to long-range provisions for university educated specialists.

The problem of personnel training is closely connected with that of giving employment to higher education graduates. As such, it is an implementation of a distinct social demand for trained specialists.

The appointment of graduates to posts is carried out according to State regulations governing job assignments. These regulations are based on provisions of the Soviet Constitution which guarantee to Soviet citizens the right to work. To take up jobs is the civic duty of all young specialists. Graduates are given jobs in accordance with the plans governing inter-departmental and intra-union job assignment.

The assignment of jobs to graduates is carried out by commissions headed by the rectors of each institution. These commissions include representatives of the ministries and the departments for which the per-

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sonnel was trained as well as representatives of social organizations. The commissions assign graduates to jobs in accordance with the specializations which they have obtained, their academic records, their family statuses, their health, and their participation in research and public activities. Priority is given to the assignment of specialists to enterprises and because construction sites and projects which are about to become operational they have the greatest need for specialists. Every young specialist is briefed beforehand about his future job, his specific post, the salary, and the kind of accommodations available. A young specialist's wishes concerning his future job is also taken into account. Some fringe benefits are granted to certain categories of graduates such as invalids, those with invalid parents, wives of servicemen, married couples, etc. Young specialists are granted a month's leave before they must take up their positions.

Graduates who attended university on leave of absence from their employing enterprises return to them after graduation.

Specialists who studied without giving up their jobs are not subject to job assignment because they were already employed before entering higher education. They thus still have jobs. It thus becomes apparent that the principle of giving employment to young specialists combines social and private interests and contributes to the systematic implementation of the idea of sending young specialists to factories, plants, industrial enterprises, and offices.

As a result of efforts made to improve the efficient distribution of jobs for young specialists, the system of higher education in Soviet Byelorussia now envisages making the initial assignments some 2 or 3 years before graduation. Such a procedure would contribute to the better training of personnel for specific jobs. It would also enable graduates to adapt more rapidly to their work places and make for closer contacts between higher education and industry.

During the 1971—1980 period, higher education institutions directed 258,400 specialists into the national economy. Of these 166,900 had followed full-time courses. Over the same period, the annual number of graduates increased almost 1.5 times.

CHAPTER 11

STAFF DEVELOPMENT

Higher education plays the leading role in the provision of life-long education by offering in-service training to most workers and cadres. The whole higher education system is involved in continuing education schemes. Collectively, they constitute one of the most efficient means for implementing new ideas in science and technology.

Consequently, a complex system of post-college education has been devised in the Byelorussian SSR, which, by means of refresher courses, adds materially to the practical knowledge of specialists in all fields. Indeed, the system is composed of a widely spread network of specialized courses for management personnel and experts in different fields of the national economy. The network comprises a number of educational subdivisions — 12 institutes, 12 faculties, and 25 autonomous courses which offer full-and part-time instruction. In-service training varies in length from 1 to 6 months. During their periods of study, students are paid their usual wages. The general direction of the whole system of in-service courses is carried out by the Ministry of Higher and Secondary Special Education of the Republic assisted by interdepartmental councils.

The main task of such courses is to teach specialists to apply the latest developments in science and technology to their work along with efficient methods of planning and economic stimulation, labour organization, computer-aided management, and mechanization of production

One of the leading centres for life-long education in the Byelorussian SSR is the Republican Interdepartmental Institute for the Upgrading of

the Qualifications of Management Personnel and Specialists from Different Branches of the National Economy. More than 5,000 workers are offered full-time courses each year at its three faculties.

The principal in-service training institution for medical staff is the Medical Further Training Institute of the Republic, a large teaching hospital closely connected with clinics and medical research organizations.

Great attention is being paid to raising the qualifications of teachers in the general secondary schools. They receive regular training at the sectional and regional teacher training institutes. These institutes also have special methodology departments which conduct experimental work

A corresponding network of education centres for raising qualifications has also been organized for technical workers, teachers at technical schools, and teachers at industrial schools.

Special attention is also paid to systematically raising the qualifications of academics because their expertise and pedagogical skills are a decisive factor in the further development of higher education and in the training of specialists (see also Chapter VIII).

The following forms of further training are offered :

— training at teacher training institutes and departments ;

— internships at the country's chief institutes, the Academy-of-Sciences, scientific institutions, research institutes attached to ministries and departments, and at major enterprises as well as abroad ;

— research appointments for preparing doctoral dissertations ;

— special leaves for writing candidates' or doctors' dissertations ;

— correspondance courses.

In the Byelorussian SSR there is an institute for improving the training of teachers of social sciences and two departments of the same kind for teachers of general (fundamental) and special subjects. Hundreds of university teachers from all Union republics annually refurbish their knowledge at the institute of social sciences. By these various means, one fifth of the university teachers in the Byelorussian republic improve their scientific and pedagogical qualifications each year. All of them are trained at institutes and departments. Such activities are so planned that once every five years every teacher is required to take a refresher course during which normal employment is suspended.

At the specialized institutes and departments, staff training is the responsibility of the most competent academics, scientists, of Academy-sponsored research institutes, and experienced specialists in industry.

The training course syllabi combine theoretical and practical information intended to guarantee to teachers the restoration and replenishment of the volume of knowledge which they will need, along with their own self-preparation, until time comes for their next term of training. The syllabi provide for a thorough study of various subjects and the assimilation of new information which has been derived from the latest achievements of science and technology. With the help of computers, technical aids, and other modern devices and equipment, active forms of instruction like management games, analyses of industries, and practical demonstrations in leading enterprises are facilitated. The centres for teacher improvement are gradually evolving into modern educational institutions boasting the best technological and control equipment.

It should be noted that the existing state-controlled system for improving the training of teachers is largely supplemented by in-service training. This training includes lectures and seminars on teaching methods, specific questions of economics, pedagogy and psychology, the application of technical aids, the use of instructional computers, people's universities, and technical universities. In the Byelorussian SSR great attention is given to the training of top educational managers : rectors, vice-rectors, deans, and heads of departments. For this purpose, lectures and seminars are given and an extensive use is made of the all-Union system for improving the qualifications of top ranking administrators. In view of scientific and technological progress, it is a matter of urgency to speed up the training of specialists in a number of pioneer sciences and technologies which have not yet been included in the lists of specializations readily available in higher education. This task is being solved by the creation of special departments within existing institutions that are being placed in charge of retraining specialists with university backgrounds and adequate experience. These departments make it possible to provide new branches of industry and science with highly trained specialists very rapidly. In the Byelorussian SSR, special departments are established for that purpose at some leading institutions, e.g., the Byelorussian State University and the Byelorussian Polytechnic Institute. They are responsible for re-training experts in questions of ecology and the effective use of natural resources. Here both specialists in industry and academics are trained together.

CHAPTER 12

THE INTERNATIONAL TIES OF BYELORUSSIAN HIGHER EDUCATION

The development and strengthening of international cooperation open up broad vistas for the higher education system of the BSSR, particularly the possibility of establishing and expanding links with many educational institutions in other countries.

The forms taken by scientific, technical, and cultural relations between the Republic's higher education institutions and foreign states consist in the exchange of teachers with a view to improving their skills and permitting them to study progressive methods as well as to participate in international congresses, symposia, language courses, undergraduate and post graduate courses of study, and study groups for production practice. All these forms of cooperation raise the level of personnel training, speed up the development of a number of research trends, and contribute to a better understanding of the economic achievements of the Soviet people by foreign countries.

A number of the Republic's institutions maintain permanent scientific, technical, and cultural ties with 11 educational institutions in socialist countries. Thus, the Byelorussian State University cooperates with the universities of Jena (GDR), Sofia (Bulgaria), Ljubljana (Yougoslavia), Krakow (Poland), Camagüey (Cuba), and Hué (Vietnam). The Byelorussian Polytechnical Institute cooperates with the Higher Technical School in Ilmenau (GDR), the Slovak Higher Technical School in Bratislava (Czechoslovakia), the Polytechnical Institute in Byalistok (Poland), and the University of Camagüey (Cuba). The Byelorussian Technological Institute cooperates with the Agricultural Academy of Warsaw and the

Higher Forestry Institute of Bulgaria. The Byelorussian State Institute of Economic Studies cooperates with the University of Camagüey (Cuba), Grodno University cooperates with the branch of Warsaw University in Byalistok. The Brest Engineering and Construction Institute cooperates with the Lublin Polytechnical Institute (Poland). The Vitebsk Technological Institute of Light Industry cooperates with the Higher Engineering School in Zielona Göra (Poland). The Minsk Pedagogical Institute cooperates with the higher pedagogical institutes of Camagüey (Cuba) and Postdam (GDR). The Byelorussian Institute for the Mechanization of Agriculture cooperates with the Agricultural Institute of Siego de Avila (Cuba).

Byelorussian institutions give diverse assistance to developing countries by training qualified personnel and sometimes by helping to found and consolidate their national education systems. Byelorussian teachers have worked successfully in educational institutions in Afghanistan, India, Algeria, Guinea, Upper Volta, and other countries of Asia and Africa.

In its cooperation with research and education establishments in non-socialist countries, Byelorussian higher education is guided by the principles of mutual advantages, of due regard for the needs of both parties, and of non-interference in each other's internal affairs.

This cooperation assumes the forms of exchanges of young scientists for work on probation projects and participation in international symposia. It is achieved through faculty exchanges as well as other kinds of contacts with a view to improving the command which teachers and students have of Russian and of other languages. In 1981, an agreement on the exchange of student groups was signed between the Minsk State Pedagogical Institute of Foreign Languages and the University of Manchester. Earlier, a similar agreement was successfully implemented between this institute and the University of Salford (UK).

Being a constituent of the Soviet educational system, the higher education system of the Byelorussian SSR takes an active part in the education and training of young men and women from foreign countries. The training of foreign specialists has been going on since 1960. During this period, we have turned out 3,521 highly qualified specialists from 31 foreign countries. Of them, 2,190 have obtained first degrees ; 167, candidates' degrees ; and 2, the DSc ; while 1,162 have pursued scientific probation projects.

Foreign students study in the principal institutions : the Byelorussian State University, the Byelorussian Polytechnic Institute, the Byelorussian Agricultural Academy, the Byelorussian Technological Institute, and the Minsk and Vitebsk Medical Institutes. The number of foreign citizens educated in the Republic is growing from year to year. At present there are 3,475 foreign students studying in 15 institutions. These include post-graduate students and students undergoing probation study from 98 countries. The largest communities of foreign students in Byelorussia are those from Vietnam, Cuba, the GDR, Afghanistan, Syria, Ethiopia, and Lebanon.

Foreign students are enrolled in 64 fields of study. Tuition for foreign students is free of charge, and as a rule, foreign students study alongside their Soviet classmates following the same syllabi and curricula, including the same compulsory subjects. The annual curriculum includes Russian. Foreign students are given all the necessary conditions for life and study. They receive grants, places to live, and free medical care. Students from developing countries as well as from Cuba, Vietnam, and Laos are given additional sums of money for the purchase of warm clothes and for rest and recreation in the USSR. They may even spend their vocations in holiday homes, and if necessary, in sanatoria. Many of them spend their vacations in international rest and labour camps.

To enable foreign citizens to more easily cope with Soviet higher education, the authorities have opened special faculties, the aim of which is to give them special preparation in the Russian language, physics, mathematics, biology as well as in Soviet social history. More than 44,000 graduates of these faculties have been sent for further study to various establishments of the Soviet Union.

The institutions of higher education of Byelorussia make constant efforts to improve the quality of the training given to foreign specialists. The study plans and curricula are reviewed regularly. For a number of major subjects special courses have been devised for foreign students which take into account the specific economic conditions, particularly the labour activity, in their countries of origin. The basic and professional training of foreign students has been intensified, particularly with regard to their use of modern machinery and technology and their understanding of the means and methods of automation, the problems of economy, the organization and management of production, and the protection of the

environment. The methods used for teaching the subjects which are studied are being improved. Active methods of teaching are widely used.

Foreign students are involved in research. They also attend international conferences, debates, lectures on films, friendship parties, and excursions to industrial enterprises and collective and state farms. They meet distinguished people and take part in solidarity meetings with organizations of national liberation and student construction teams. Sightseeing tours of the cities and historical spots in the republic and in the whole country are organized for them. The "Druzhba" coach tours of the Union Republics are very popular with foreign students.

Foreign students are actively involved in the social lives of Soviet students with whom they may develop close relationships. They can stand for election to the various organs of student self-government and take part in amateur artistic and sports events.

Foreign graduates are equipped to work successfully in their own countries upon their return to them. Some of these graduates now occupy responsible positions in State bodies in industry, in agriculture, and in scientific and cultural establishments. They contribute to the consolidation of friendship between the peoples of their nations and the Soviet people.

As a rule, the feedback about specialists who have graduated from Byelorussian higher education institutions has been positive. In fact, the institutions in question maintain close contacts with their graduates, rendering them all necessary assistance by consultations and by sending them literature. The Byelorussian State University and the Byelorussian Polytechnic Institute have organized seminars for foreign specialists and foreign gradutes of Soviet higher education institutions aimed at improving their skills.

The Byelorussian SSR is one of the participants in the Unesco European Centre for Higher Education in Bucharest. In addition to participating in the work of this organization, it also takes part in the conferences of Ministers of Higher Education of the European countries at which many important proposals for the strengthening of international cooperation in the area of education are discussed.

CHAPTER 13

FUTURE PROSPECTS

Higher education in Byelorussian SSR has accomplished a good deal over the last 5 years, a relatively short period in terms of history. The system of higher education has now become a powerful branch of the national economy which provides qualified specialists for practically all spheres of public life. Additionally, it possesses great scientific and technological potential, and it contributes to the development of productive forces and to socio-economic and cultural progress.

Soviet higher education is always on the move, constantly searching for, and accumulating what is progressive and advanced. An integral part of the Soviet system of higher education, Byelorussian higher education entered a new stage in its development in the 1980's which is bound up with the building of a developed socialist society in our country and with the rapid advance of the economy and of all the spheres of public life.

Increasing emphasis is being placed on questions of quality such as the improvement of the content of education, the raising of scientific and professional skill levels, and the assurance of the continued development of higher education to meet the long-term requirements of the economy, science, technology, and culture. This course is exactly the one which was mapped out and which evolved as a result of the decisions of the 26th CPSU Congress and the 29th Congress of the Communist Party of Byelorussia and of decrees issued by the Party and the government.

Higher education will therefore focus its attention on the primary task of further improving the planning of training and the distribution

and efficient employment of specialists. These demands on the mechanisms of the planned management of higher education give rise to a number of related sub-problems such as careful estimates of numbers of specialists needed in the distant future, long-term forecasts of the development of higher education, the organization of interdepartmental and interrepublic co-operation in the training of specialists, the specialization of higher education institutions and the estimated employment needs for graduates in various branches of the economy. The tasks outlined here are fairly complex and call for a profound analysis at the ministerial as well as at the departmental and union levels, of the state of affairs. They call for joint efforts on the part of the central planning agencies and the corresponding sections and branches of industry as well as the central higher education authorities of the Republic and the governing bodies of higher education institutions proper.

In pursuing such a planned policy, higher education must proceed, first of all, from the fact that the overall scale of specialist training attained in the Republic, so far, has stabilized and does not require any considerable growth. Under these circumstances the decisions concerning the development of higher education in the Republic can be carried out not by further expanding the network of institutions but by better orienting their activities towards the development of the economy, of science, of technology, and of culture. All these aspects can be achieved by internal reorganization, by providing courses in new fields, by cutting down on those which are no longer in great demand, and by extending evening and correspondence courses within the limits of established admissions quotas.

Needless to say, institutions will first of all provide courses in new specialities which will help to increase the national output, to raise labour productivity, to improve technological processes, to develop and to design new technologies and to promote research in advanced scientific and technological fields.

As is well understood, the foundations for the successful training of specialists are laid as a result of the admissions of new students. Thus the improvement of admissions procedures is essential so as to be assured that the most thoroughly prepared and most capable of young people are admitted to institutes and universities. One of the best ways to deal with this problem is to organize an early professional selection, to ensure

broad preparatory training of school leavers for studies in institutes and universities, and to increase the effectiveness of preparatory departments, courses, schools, etc.

Higher education is to be further perfected by improving the teaching and educational process through the enrichment of its content and the promotion of more advanced and efficient teaching methods. To accomplish the latter task, it is necessary both to take into account the organic interlinkage of all aspects of each teaching programme and to replace the informative way of teaching by the active one.

In the next ten years, the whole system of curricula and teaching materials is to be reformulated on a more advanced methodological basis through the introduction of new curricula and programmes based on qualification standards that take into account recent achievements in science and technology and the teaching and methodological aspects of disciplines and specialities. As part of this general reformulation, new textbooks and manuals will be published ; laboratories and other teaching facilities will be re-equipped ; computer technology and other forms of advanced teaching aids will be introduced ; and the qualification standards of teachers and auxiliary staff will be raised.

Solving the tasks with which the system of higher education is confronted at the present stage requires further improvement of the skills of scientific and academic personnel. The various institutions must continue to employ the finest scientific and academic personnel by means of a more effective utilization of the existing means of recruitment and further training : post graduate education, transfer to research posts, creative leaves of absence, employment of teachers on competitive bases, etc. In this connection, a wide range of measures will be taken to raise the professional skills of the teaching staffs and to improve the means whereby they are granted scientific and pedagogical certification.

The scientific potential of higher education in the BSSR will be increased by focusing research on topical problems, requiring a more extensive use of complex target programmes, setting up high powered research teams, consolidating those networks concerned with research resources and facilities, and systematically studying the problems of higher education. All of these above will be more closely linked with the needs of the national economy and the speeding up of those processes whereby the results of research are adopted by industry and research management at all levels.

Further improvements in the teaching and educational processes as well as in research in the Republic's higher education establishments require that the latter's technical facilities not be of lower quality than those of advanced industrial enterprises and research institutions. At the same time, further steps must be taken to better the working and living conditions of teaching staff and students and to develop sporting and recreation facilities for them.

The complexity and the number of the tasks facing modern higher education require that its management be improved by the following means :

— the use of computers and information control systems that facilitate the thorough assessment of working situations in all areas, to forecast their development, and to draw well-grounded conclusions ;

— target programme planning ;

— broad public involvement in management through academic and research working groups, academic councils, and committees on research methods ;

— the perfection of the system of interdepartmental and intra-institutional inspection as a major means of management. The strengthening of collective forms of government as a principal means of educational development is a characteristic feature of administrative functions in higher education.

It goes without saying that the multitude of ways for improving higher education cannot be confined to the above-mentioned programme alone. The main point is that a dynamically developing socio-economic and technological process, embracing all spheres of social life, dialectically determines qualitative changes in practically all aspects of higher education.

CHAPTER 14

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Table I

Number of higher education institutions (1915—1981)

Academic years	1915—1916	1925—1926	1935—1936	1945—1946	1955—1956	1965—1966	1975—1966	1981—1982
Number of Higher Education Institutions	1	4	22	24	24	27	31	33

Table II

Regional distribution of institutions

Name of Region	Number of Higher Education Institutions						
	1976	1977	1978	1979	1980	1981	1982
Brest	2	2	2	2	2	2	2
Vitebsk	5	5	5	5	5	5	5
Gomel	3	3	3	3	4	5	5
Grodno	3	3	3	3	3	3	3
Minsk (including the City of Minsk)	14	14	14	14	14	14	14
Mogilev	4	4	4	4	4	4	4
Total	31	31	31	31	32	33	33

Table III

Number of graduates
(prior to the beginning of the academic year)

Categories	1940/41	1965/66	1970/71	1975/76	1980/81
The total number of graduates per year — in thousands of people	3.2	12.4	20.6	25.0	30.7
The number of those finishing full-time courses	2.6	7.2	12.1	16.4	20.2
The total number of graduates per 10 thousand people	4	14	23	27	32

Table IV

Student population
(prior to the beginning of the academic year)

Categories	1940/41	1965/66	1970/71	1975/76	1980/81
The total student population in thousands of people	21.5	104.0	140.0	159.9	177.0
Percentages of women to the total student population		46.9	51.8	52.6	55.1
Of the total student population, students taking :					
— full-time courses	13.1	49.0	79.5	97.1	110.0
— part-time evening courses	0.3	12.0	15.7	17.2	16.6
— part-time correspondence courses	8.1	43.0	44.8	45.6	90.4
The student population per 10,000 people	24	120	154	170	183
The number of students (in thousands people) admitted to higher education :					
— day-time departments	3.7	12.8	18.7	22.9	24.1
— evening departments	0.1	2.6	3.4	3.7	2.9
— extramural departments	3.2	9.7	8.3	8.3	9.4
Total	7.0	25.1	30.4	34.9	36.4

Table V

Total number of students per major branch of the National Economy and Culture
(prior to the beginning of the academic year, in thousands of people)

Categories	1965/66	1970/71	1975/76	1980/81	1981/82
The total number of students specializing in :					
— construction, industry	25.2	42.3	55.1	62.3	62.2
— transport	4.2	5.9	5.4	5.9	5.9
— agriculture	17.9	19.2	21.3	24.4	24.6
— economics	6.5	9.5	11.4	16.3	16.9
— health services, physical culture and sports	9.7	11.3	11.3	12.0	12.3
— public education	39.3	51.0	53.8	54.6	55.3
— theatre, arts and cinematography	1.2	1.7	1.6	1.5	1.6
Total	104.0	140.0	159.9	177.0	178.8

Table VI

Social composition of the student population

(at the beginning of the academic 1980—1981 year, percentage in proportion to the total student population)

Types of Higher Education Institutions	Workers or children of workers	Collective-farmers or children of collective-farmers	Office employees or children of office employees
All institutions :	36.8	11.1	52.1
Institutions according to the following specializations :			
industry	46.0	5.0	49.0
construction	49.0	13.0	38.0
transport	44.0	4.0	52.0
agriculture	29.0	42.0	29.0
economics	27.0	13.0	60.0
health	38.0	8.0	54.0
physical culture and sports	43.0	3.0	54.0
arts and cinematography	27.0	3.0	70.0
education	28.0	9.0	63.0

Table VII

Total number of foreign students studying in the Byelorussian SSR

(thousands of people according to academic year)

1970/1971	1971/1972	1972/1973	1973/1974	1974/1975	1975/1976	1976/1977	1977/1978	1978/1979	1979/1980	1980/1981	1981/1981
0.65	0.78	0.85	0.87	1.10	1.47	1.64	1.98	2.28	2.67	2.92	3.28

Table VIII

Volume of research

(1971 is taken as 100 per cent)

Categories	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Total volume of research	100	134	156.7	184.9	222.9	266.5	291.8	337.6	375.6	404.9	451.2
including : research under contract with entreprises	75.3	103.9	122.3	145.1	181.1	223.8	244.8	286.9	321.3	354.0	398.2

Table IX

Indices of the physical education of students

Categories	1975	1979	1980	1981
Total number of students actively participating in sports	75,600	96,581	93,952	100,638
those trained to become :				
athletes of mass rating	26,400	31,193	38,437	40,694
"Ready for Labour and Defense" badgewinners	23,800	25,956	25,966	28,143
candidates for the mastership of sports and athletes of the 1st rating	1,493	1,853	1,989	2,151
USSR and international masters of sports	123	226	135	92
Facilities available :				
gymnasiums	87	100	94	104
outdoor sports grounds	128	151	159	156

Table X

BSSR Institutions of Higher education

No	Names of institutions	Year of Foundation	Departmental subordination
1	V. I. Lenin Byelorussian Order of the Red Banner of Labour State University	1921	The BSSR Ministry of Higher and Specialized Secondary Education
2	Byelorussian Order of the Red Banner of Labour Polytechnic Institute	1920	"
3	Gomel State University	1969	"
4	Grodno State University	1978	"
5	S. M. Kirov Byelorussian Order of the Red Banner of Labour Technological Institute	1930	"
6	V. V. Kuibyshev Byelorussian State Institute of National Economy	1933	"
7	Minsk Radiotechnical Institute	1964	"
8	Brest Institute of Civil Engineering	1966	"
9	Vitebsk Technological Institute of Light Industry	1965	"
10	Mogilev Machine-Building Institute	1961	"
11	Byelorussian Leninist Young Communist League Novopolotsk Polytechnical Institute	1974	"

No	Names of institutions	Year of Foundation	Departmental subordination
12	Mogilev Technological Institute	1973	The BSSR Ministry of Higher and Specialized Secondary Education
13	Gomel Polytechnic Institute	1981	"
14	Minsk State Pedagcgical Institute of Foreign Languages	1948	"
15	Byelorussian State Institute of Theatre and Fine Arts	1945	"
16	Minsk Institute of Culture	1975	"
17	A. M. Gorky Minsk Order of the Red Banner of Labour State Pedagogical Institute	1931	The BSSR Ministry of Public Education
18	A. S. Pushkin Brest State Pedagogical Institute	1950	"
19	S. M. Kirov Vitebsk State Pedagogical Institute	1918	"
20	A. Kulyeshov Mogilev State Pedagogical Institute	1930	"
21	N. K. Krupskaya Mozyr State Pedagogical Institute	1944	"
22	Minsk Order of Red Banner of Labour State Medical Institute	1930	The BSSR Ministry of Health
23	Grodno State Medical Institute	1951	"
24	Vitebsk State Medical Institute	1934	"
25	Byelorussian Order of the Red Banner of Labour and Order of the October Revolution Agricultural Academy	1940	The USSR Ministry of Agriculture
26	Grodno Agricultural Institute	1951	"
27	Byelorussian Institute of Mechanization of Agriculture	1954	"
28	October Revolution Vitebsk Order of the "Badge of Honour" Veterinary Institute	1924	"
29	Byelorussian Order of the Red Banner of Labour State Institute of Physical Culture	1937	The Committee for Physical Culture and Sports under the BSSR Council of Ministers
30	Byelorussian Institute of Railway Engineering	1953	The USSR Ministry of Railways
31	A. A. Lunacharsky Byelorussian State Conservatory	1932	The BSSR Ministry of Culture
32	Minsk Higher Party School	1932	The Central Committee of the Communist Party of Byelorussia
33	Gomel Cooperative Institute	1980	The Central Union of Cooperative Societies

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